

# Service Manual

Cassette Deck

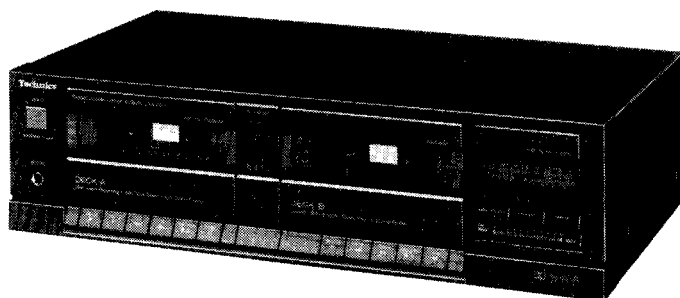
RS-T130

Dolby NR-Equipped  
Stereo Double Cassette Deck



Color

(S)...Silver Type  
(K)...Black Type



Area

Color	Area
(S) (K)	(E) .....Continental Europe.
(S) (K)	(EK).....United Kingdom.
(S) (K)	(EG).....F.R. Germany.
(S) (K)	(EH).....Holland.
(S) (K)	(XA).....Asia, Latin America, Middle Near East, Africa and Oceania.
(S) (K)	(XL) .....Australia.

## SPECIFICATIONS

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(DECK A) REC/PLAY	Solid Permalloy head
Erasing	Double-gap ferrite head
(DECK B) PLAY	Solid Permalloy head
Motors	
(DECK A) Capstan/reel table drive	
2 speed electronically controlled DC motor	
(DECK B) Capstan/reel table drive	
2 speed electronically controlled DC motor	
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1-7/8 ips)
Frequency response (w/o Dolby N.R.)	
METAL	20 Hz~16 kHz
	30 Hz~15 kHz (DIN)
CrO <sub>2</sub>	20 Hz~15 kHz
	30 Hz~15 kHz (DIN)
NORMAL	20 Hz~15 kHz
	30 Hz~15 kHz (DIN)
S/N (signal level = max recording level, CrO <sub>2</sub> type tape)	
Dolby B NR on	66 dB (CCIR)
NR off	56 dB (A weighted)

Wow and flutter (Except XL)	0.08% (WRMS) ±0.2% (DIN)
Wow and flutter (XL)	0.1% (WRMS)

### Fast Forward and Rewind Time

Approx. 105 seconds with C-60 cassette tape

### Input sensitivity and impedance

LINE 60 mV/47 kΩ

### Output voltage and impedance

LINE 400 mV/3.2 kΩ

HEADPHONES 30 mV/8 Ω

## ■ GENERAL

Power consumption 18W

### Power supply

For Australia and United Kingdom AC 50Hz/60Hz, 240V

For continental Europe AC 50 Hz/60 Hz, 220V

For others AC 50 Hz/60 Hz, 110V/127V/220V/240V

Dimensions (W×H×D) 430 × 120 × 228 mm

Weight 3.8 kg

### Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

\* Dolby noise reduction manufactured under license from  
Dolby Laboratories Licensing Corporation.  
"Dolby" and the double-D symbol are trade marks of Dolby  
Laboratories Licensing Corporation.

# Technics

Matsushita Electric Industrial Co., Ltd.

Central P.O. Box 288, Osaka 530-91, Japan

## CONTENTS

	Page
• How To Connection .....	2
• Accessories .....	2
• Location of Controls .....	3
• Disassembly Instructions .....	4
• Measurement and Adjustment Methodes .....	5~7
• Microcomputer Terminal Function .....	8, 9
• Wiring Connection Diagram .....	10
• Block Diagram .....	11, 12

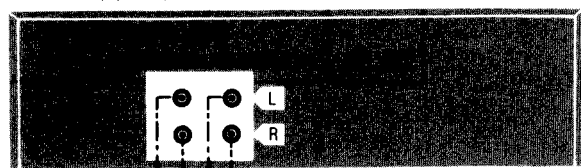
	Page
• Printed Circuit Boards .....	13~16
• Schematic Diagram .....	17~20
• Resistors & Capacitors .....	21, 22
• Replacement Parts List .....	23
• Terminal Guide of IC's, Transistors and Diodes .....	24
• Mechanical Parts Location .....	25, 26
• Replacement Parts List .....	27, 28
• Cabinet Parts Location .....	29, 30

## HOW TO CONNECTION

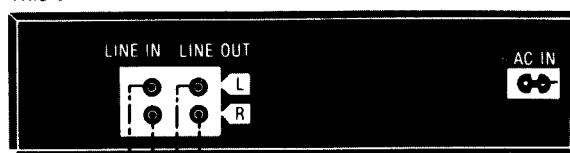
### Placement Hints

If this unit is placed near a stereo receiver, a "hum" noise may be heard during tape playback, recording, or AM reception of the receiver.  
If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

Receiver (option)



This unit



AC power supply cord (included)

Stereo connection cables (included)

The configuration of the AC outlet and AC power supply cord differs according to area.

Household AC outlet

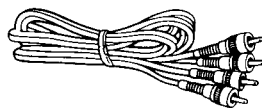
### For United Kingdom only:

Household AC outlet

Fit a suitable plug to the AC power supply cord.

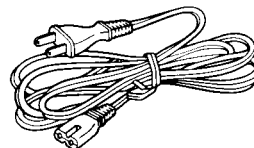
## ACCESSORIES

- Stereo connection cables ..... 2  
  SJP2201



- AC power supply cord ..... 1


SFDAC05E03.... (E, EG, EH)  
SFDAC05G02 ... (EK)  
SJA163 ..... (XL)  
SJA185 ..... (XA)



## LOCATION OF CONTROLS

### Headphones jack (phones)

#### Power “standby , on” switch (power “standby , on”)

This switch turns on and off the secondary circuit power only. The unit is in the “stand-by” condition when this switch is set to the “standby  ” position. Regardless of the switch setting, the primary circuit is always “live” as long as the power cord is connected to an electrical outlet.

#### Tape-select indicators (Auto Tape Select)

The tape selector setting changes automatically, and the indicator indicates the type of tape being used in “DECK A”.

#### “DECK A” counter/reset button (DECK A counter/reset)

This indicates the amount of tape travel of “DECK A”. When this button is pressed, the readout will be reset to “000”.

#### Editing tape-speed selector (editing speed)

Press to select the tape speed for edit-recording.

#### Editing/auto space switch (editing/auto space)

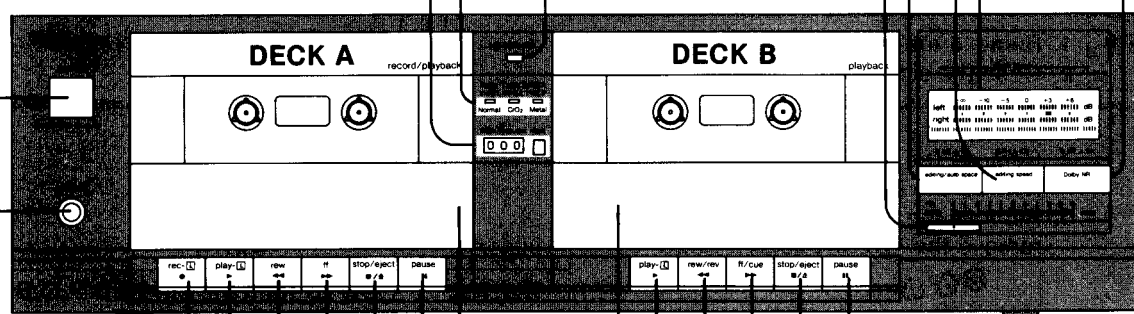
#### Recording level control (rec level)

#### Recording indicator (rec indicator)

#### Level meters (peak level)

During recording, these meters indicate the recording level. The level is adjusted by using the recording level control. During playback, they indicate the level of the recorded sound.

#### Dolby noise-reduction switch (Dolby NR)



#### When using “DECK A”

Record button (rec- / ●)

Playback button (play- /▶)

Rewind button (rew/◀◀)

Fast-forward button (ff/▶▶)

Stop/eject button (stop/eject/■/▲)

Pause button (pause/||)

Cassette holder

#### When using “DECK B”

Pause button (pause/||)

Stop/eject button (stop/eject/■/▲)  
Press this button to stop the tape and to open the cassette holder.

Fast-forward/cue button (ff/cue/▶▶)

Rewind/review button (rew/rev/◀◀)

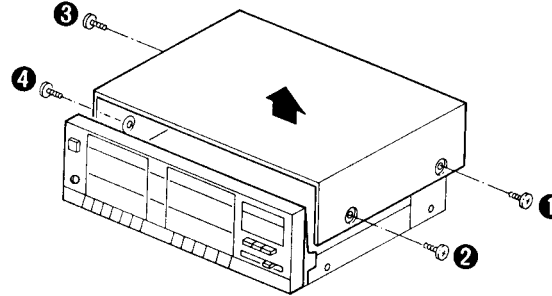
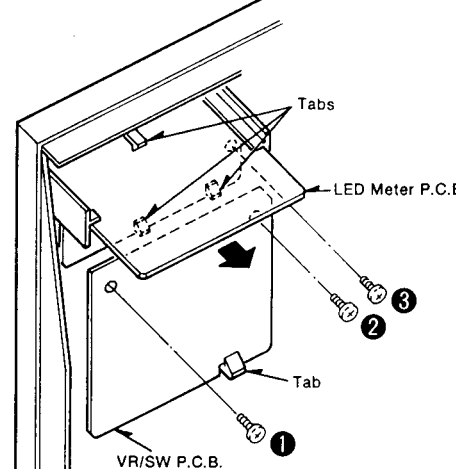
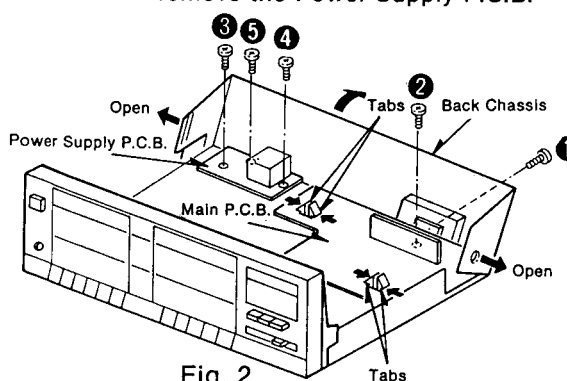
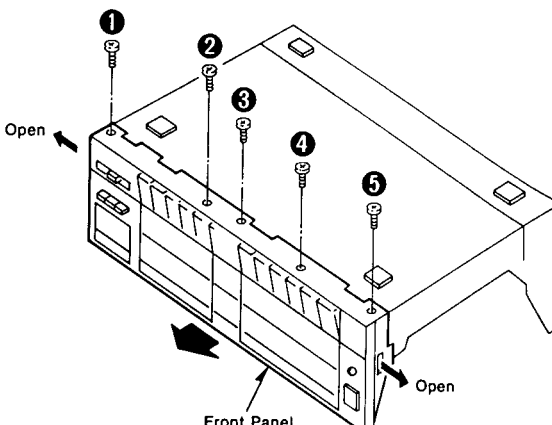
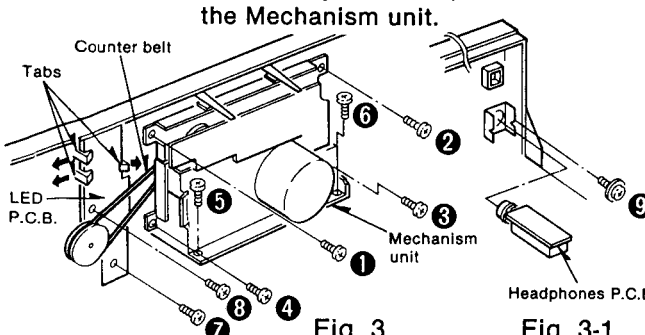
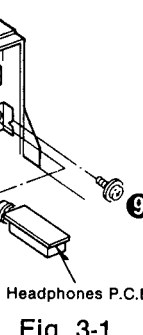
Playback button (play- /▶)

Cassette holder

## DISASSEMBLY INSTRUCTIONS

### "ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

<b>Ref. No.</b> 1	<b>How to remove the cabinet</b>	<b>Ref. No.</b> 4	<b>How to remove the LED meter P.C.B. and VR/SW P.C.B.</b>
<b>Procedure</b> 1	• Remove the 4 screws (①~④).	<b>Procedure</b> 1 → 2 → 4	1. Remove the 2 screws (①, ②). 2. Push the one tab aside, and then remove the VR/SW P.C.B. 3. Remove the one screw (③). 4. Push the 3 tabs aside, and then remove the LED meter P.C.B.
	 <p>Fig. 1</p>		 <p>Fig. 4</p>
<b>Ref. No.</b> 2	<b>How to remove the Main P.C.B. and Power Supply P.C.B.</b>	<b>Ref. No.</b> 5	<b>How to remove the LED P.C.B. and Headphones P.C.B.</b>
<b>Procedure</b> 1 → 2	1. Remove the one screws (①). 2. Open the side of back chassis, and then pull down it. 3. Remove the one screw (②). 4. Remove the 4 tabs aside, and then remove the Main P.C.B. 5. Remove the 3 screws (③~⑤), and then remove the Power Supply P.C.B.	<b>Procedure</b> 1 → 2 → 3 → 5	1. Remove the 2 screws (⑦, ⑧). (Fig. 3) 2. Remove the 3 tabs aside. (Fig. 3) 3. Remove the one screw (⑨), and then remove the Headphones P.C.B. (Fig. 3-1).
	 <p>Fig. 2</p>	<b>Ref. No.</b> 6	<b>How to remove the Front panel</b>
<b>Ref. No.</b> 3	<b>How to remove the Mechanism unit (DECK A/B)</b>	<b>Procedure</b> 1 → 3 → 4 → 5 → 6	1. Remove the 5 screws (①~⑤). 2. Open the sides of Front panel, and then pull it to yourself.
<b>Procedure</b> 1 → 2 → 3	1. Remove the 6 screws (①~⑥). 2. Remove the counter belt (for mechanism unit of DECK A). 3. Push the eject button, and then remove the Mechanism unit.		 <p>Fig. 5</p>
	 <p>Fig. 3</p>  <p>Fig. 3-1</p>		

## MEASUREMENT AND ADJUSTMENT METHODES

### Measurement Condition

- Recording level control; Maximum
- Edit-recording/auto space switch; Off
- NR switch; Off
- Editing tape speed selector; X1

### Measuring instrument

- EVM(Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

### Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ )

- ATT(Attenuator)
- DC voltmeter
- Resistor (600Ω)

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment  
Normal reference blank tape; QZZCRA  
CrO<sub>2</sub> reference blank tape; QZZCRX  
Metal reference blank tape; QZZCRZ

### HEAD AZIMUTH ADJUSTMENT (DECK A, B)

1. Playback the azimuth adjusted part(8kHz, -20dB) of the test tape(QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized.

(When the adjusting positions are different with L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)

2. At the same time, obtain a lissajous waveform and eliminate phase deflection.
3. After adjustment, lock the tape guide height and angle adjustment screws.

Playback Head: DECK B  
Record/Playback Head: DECK A

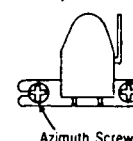


Fig. 1

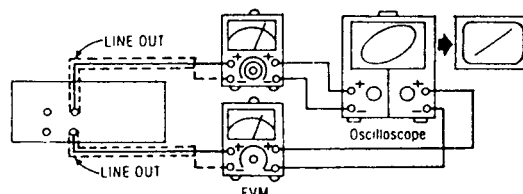


Fig. 2

### TAPE SPEED ADJUSTMENT (DECK A, B)

#### Normal speed

1. Set the editing tape speed selector to "X1".
2. Playback the middle part of the test tape (QZZCWAT).
3. Adjust Deck A=VR802 and Deck B=VR801 so that the output is within the standard.

#### High speed

4. Set the editing tape speed selector to "X2" and connect the Deck A=TP1 and TPN1, Deck B=TP2 and TPN2.
5. Playback the middle part of the test tape (QZZCWAT).
6. Adjust Deck A=VR803 so that the output is within the standard.
7. Open the Deck A=TP1 and TPN1, Deck B=TP2 and TPN2.

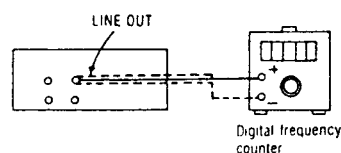


Fig. 3

Standard value:  $3000 \pm 45$  Hz (Normal),  $6000 \pm 600$  Hz (High)

### PLAYBACK FREQUENCY RESPONSE (DECK A, B)

1. Playback the playback frequency response part (315Hz, 12.5kHz~ 63Hz, -20dB) of the test tape (QZZCFM).
2. Check that the frequency is within the range shown in Fig. 5 for both L-CH and R-CH.

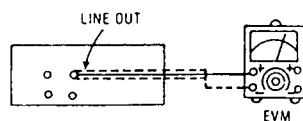


Fig. 4

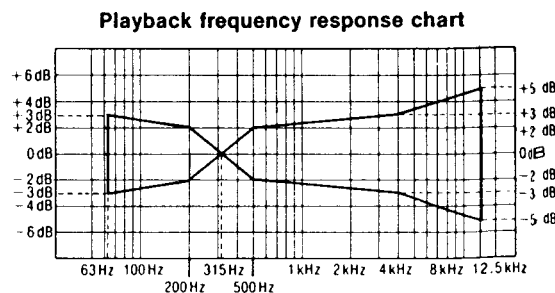


Fig. 5

### PLAYBACK GAIN ADJUSTMENT (DECK A, B)

1. Playback the playback gain adjusted part (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck B=VR1 (L-CH) [[VR2 (R-CH)]] and Deck A=VR3 (L-CH) [[VR4 (R-CH)]] so that the output is within the standard.

Standard value:  $0.4V \pm 0.5dB$

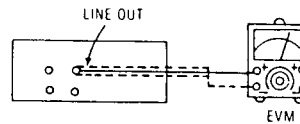


Fig. 6

### OVERALL FREQUENCY RESPONSE

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1kHz, -20dB) through an attenuator.
3. Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1kHz).
6. If it is not within the standard range, adjust VR301 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
7. Repeat steps 2~6 above using the CrO<sub>2</sub> tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in Fig. 9.

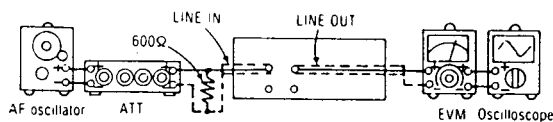


Fig. 7

Normal Overall frequency response chart (NR OUT)

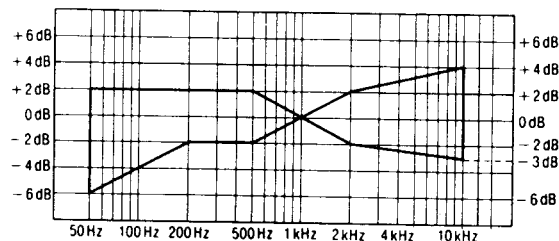


Fig. 8

CrO<sub>2</sub>-Metal Overall frequency response chart (NR OUT)

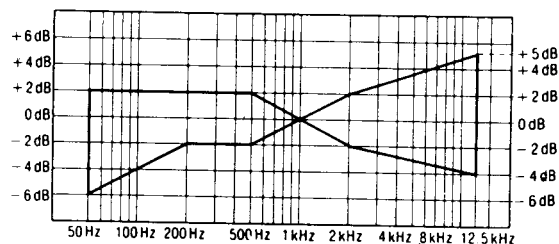


Fig. 9

### OVERALL GAIN ADJUSTMENT

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1kHz, -20dB). Attenuate the output so that its level becomes 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust VR5 (L-CH) and VR6 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value:  $0V \pm 0.5dB$

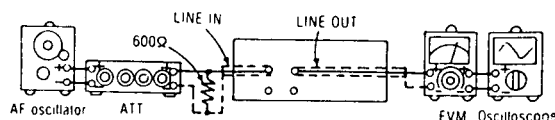
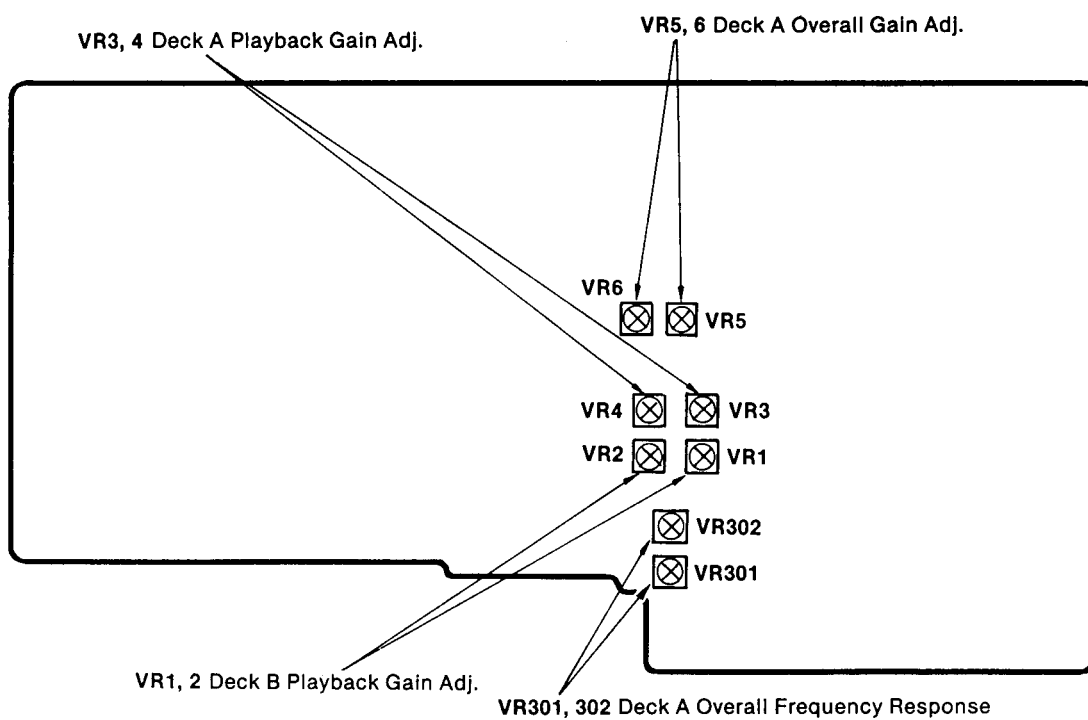


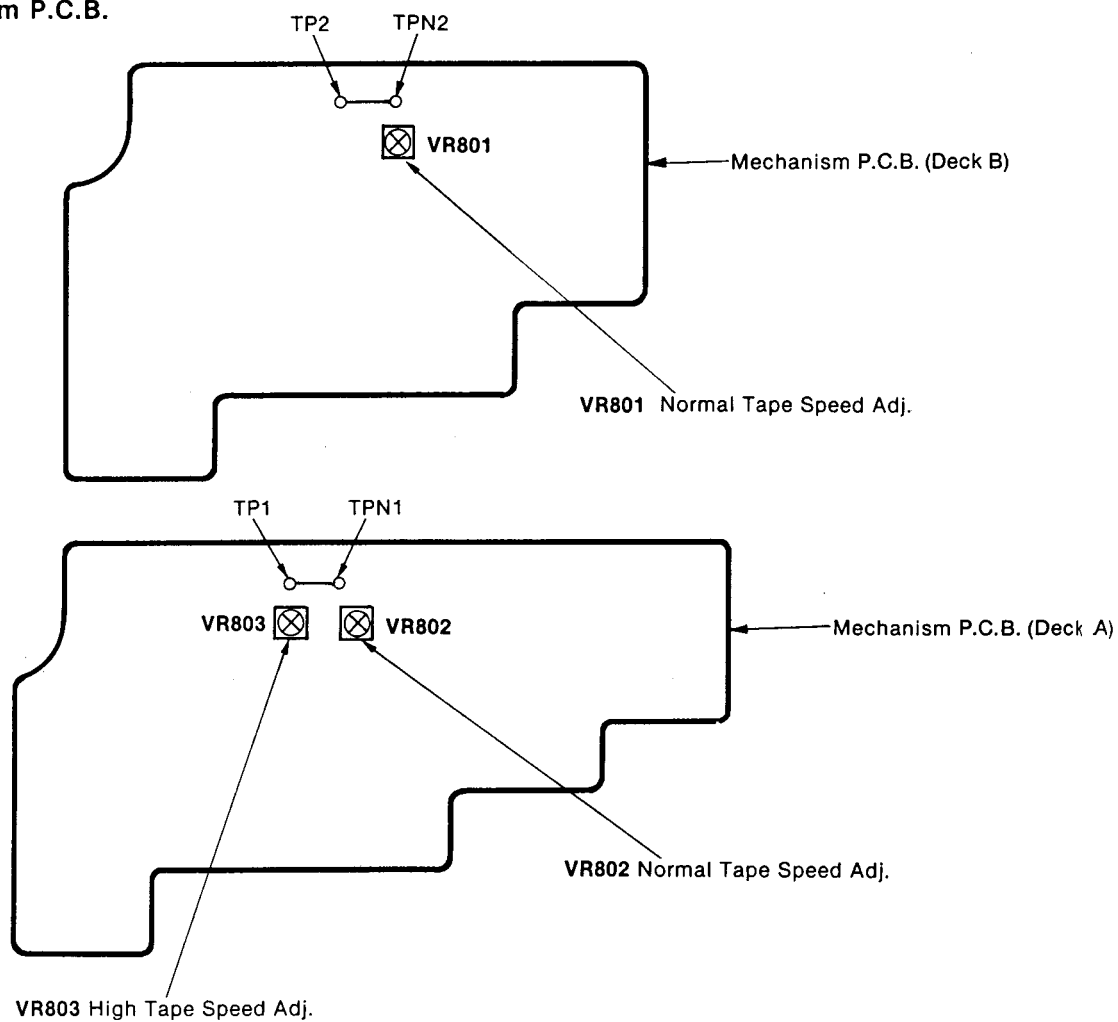
Fig. 10

## • Adjustment Points

### • Main P.C.B.



### • Mechanism P.C.B.



## ■ MICROCOMPUTER TERMINAL FUNCTION

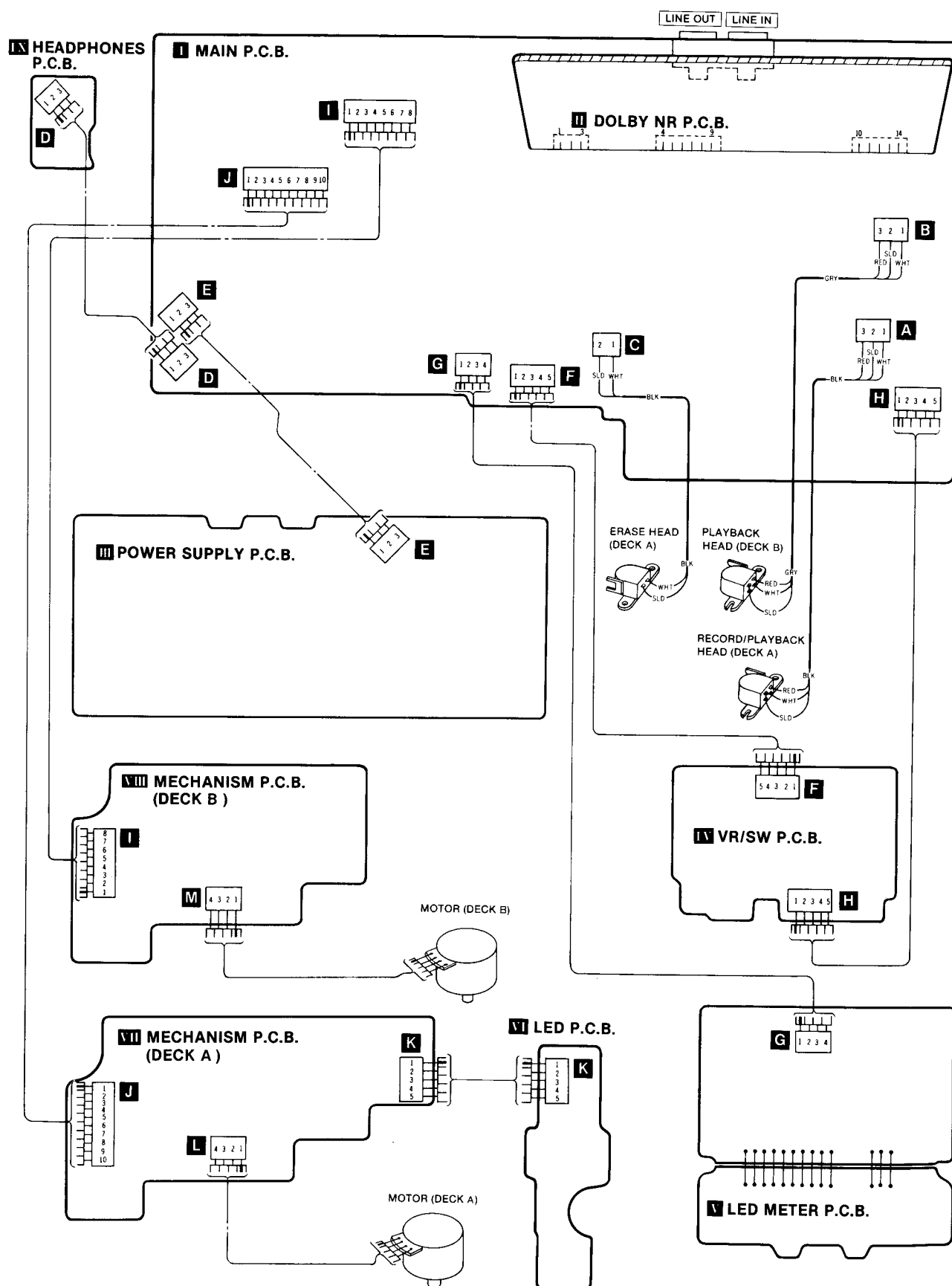
### (IC801: MN1402STO)

Terminal No.	Symbol	In/Out	Name	Function/operation
1	V <sub>SS</sub>	—	—	•Connection to GND.
2	CO9	—	—	•Non connection.
3	CO8	—	—	•Not used in this unit.
4	CO7	—	—	•Not used in this unit.
5	CO6	Output	Direct muting (DMT) signal output	<ul style="list-style-type: none"> <li>•“L” in mute on (STOP, FF/REW and each selector), “H” in mute off (REC, PLAY).</li> <li>•DMT Output timing of each selector.</li> </ul>
6	CO5	Output	Muting off signal output of playback AMP	•Deck B “L” in CUE/REV, “H” in other.
7	AI3	Input	Reading of input switch state deck B auto tape selector (S904)	<ul style="list-style-type: none"> <li>•“L” when auto tape selector is on mode.</li> <li>•“H” when auto tape selector is off mode.</li> </ul>
8	AI2	Input	Reading of input switch state deck B FF/REW (S902)	<ul style="list-style-type: none"> <li>•“L” when FF/REW switch is on mode.</li> <li>•“H” when FF/REW switch is off mode.</li> </ul>
9	AI1	Input	Reading of input switch state deck A, deck B motors (S906, S903)	<ul style="list-style-type: none"> <li>•DO0 output (Scan A) signal→“L” Deck A... “L” in motor switch on, “H” in motor switch off.</li> <li>•DO1 output (Scan B) signal→“L” Deck B... “L” in motor switch on, “H” in motor switch off.</li> </ul>
10	AI0	Input	Reading of input switch state deck A, deck B PLAY (S905, S901)	<ul style="list-style-type: none"> <li>•DO0 output (Scan A) signal→“L” Deck A... “L” in PLAY switch on, “H” in PLAY switch off.</li> <li>•DO1 output (Scan B) signal→“L” Deck B... “L” in PLAY switch on, “H” in PLAY switch off.</li> </ul>
11	BI3	Input	Reading of input switch state editing (S1)	<ul style="list-style-type: none"> <li>•“L” when editing switch is on mode.</li> <li>•“H” when editing switch is off mode.</li> </ul>
12	BI2	Input	Reading of input switch state Tape speed selector (S2)	<ul style="list-style-type: none"> <li>•“L” when tape speed selector is on mode.</li> <li>•“H” when tape speed selector is off mode.</li> </ul>



Terminal No.	Symbol	In/Out	Name	Function/operation
13	BI1	Input	Reading of input switch state deck A auto tape selector (S908)	<ul style="list-style-type: none"> <li>•“L” when auto tape selector is on mode.</li> <li>•“H” when auto tape selector is off mode.</li> </ul>
14	BI0	Input	Reading of input switch state deck A REC (S907)	<ul style="list-style-type: none"> <li>•“H” when REC switch is on mode.</li> <li>•“L” when REC switch is off mode.</li> </ul>
15	EO0	Output	Mode selector deck A	•“L” in PLAY mode, “H” in other mode.
16	EO1	Output	Playback equalizer (120μs/70μs) selector	•“L” in 120μs mode, “H” in 70μs mode.
17	EO2	Output	Tape speed (X1/X2) selector	•“L” in normal speed (X1), “H” in high speed (X2).
18	EO3	Output	Dolby IC mode selector (REC/PLAY)	•“L” in REC mode, “H” in PLAY mode.
19	$\overline{RST}$	Input	Reset terminal	<ul style="list-style-type: none"> <li>•Used to reset the microcomputer when power is thrown in.</li> <li>•Reset at “L”.</li> </ul>
20	TST	—	—	•Connection to GND.
21	DO3	Output	Motor selector deck B	•“H” in motor deck B off, “L” in motor deck B on.
22	DO2	Output	Motor selector deck A	•“H” in motor deck A off, “L” in motor deck A on.
23	DO1	Output	Scan B	•Scan signal for reading of PLAY switch input.
24	DO0	Output	Scan A	•Scan signal for reading of PLAY switch input.
25	SNS0	—	—	•Not used in this unit.
26	SNS1	—	—	•Non connection.
27	V <sub>DD</sub>	—	Power supply terminal	•Operative on 5±0.5 volts.
28	OSC	Input	Clock Oscillation	•Clock oscillation of about 300kHz.

# WIRING CONNECTION DIAGRAM



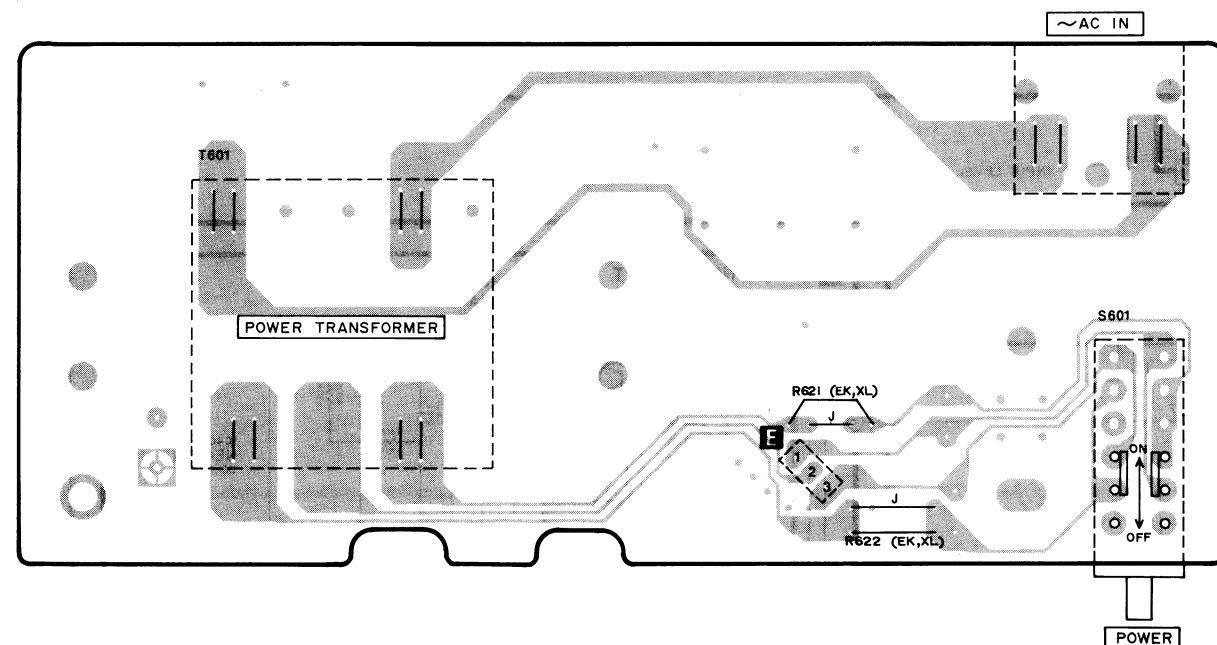
## ■ BLOCK DIAGRAM



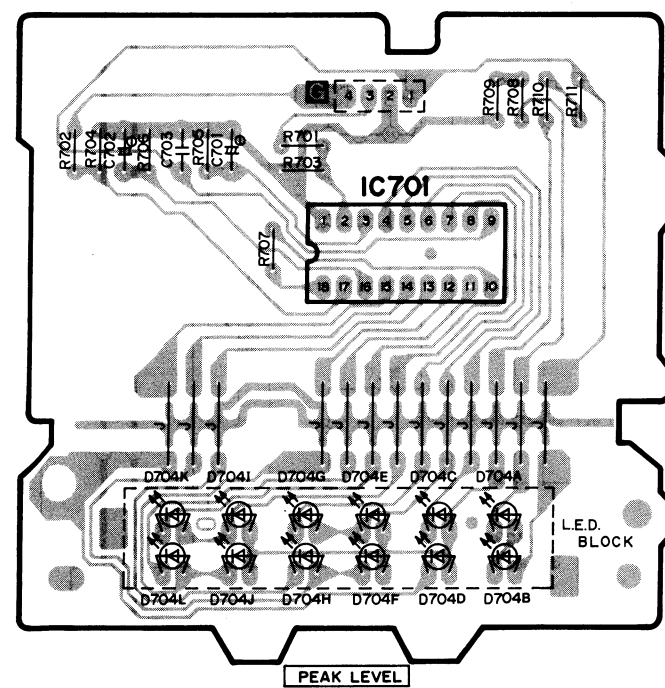


11 12 13 14 15 16 17 18 19 20

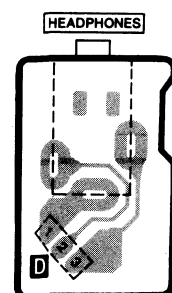
### III POWER SUPPLY P.C.B. (Except XA)



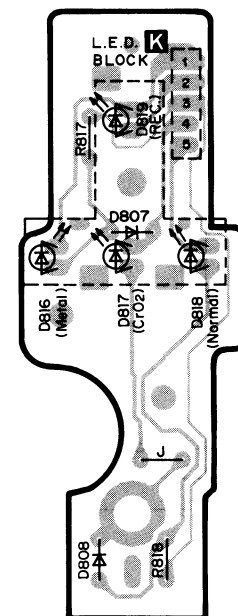
### V LED METER P.C.B.



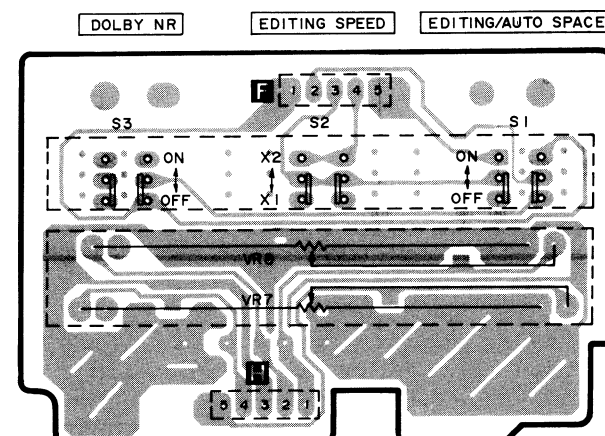
### IX HEADPHONES P.C.B.



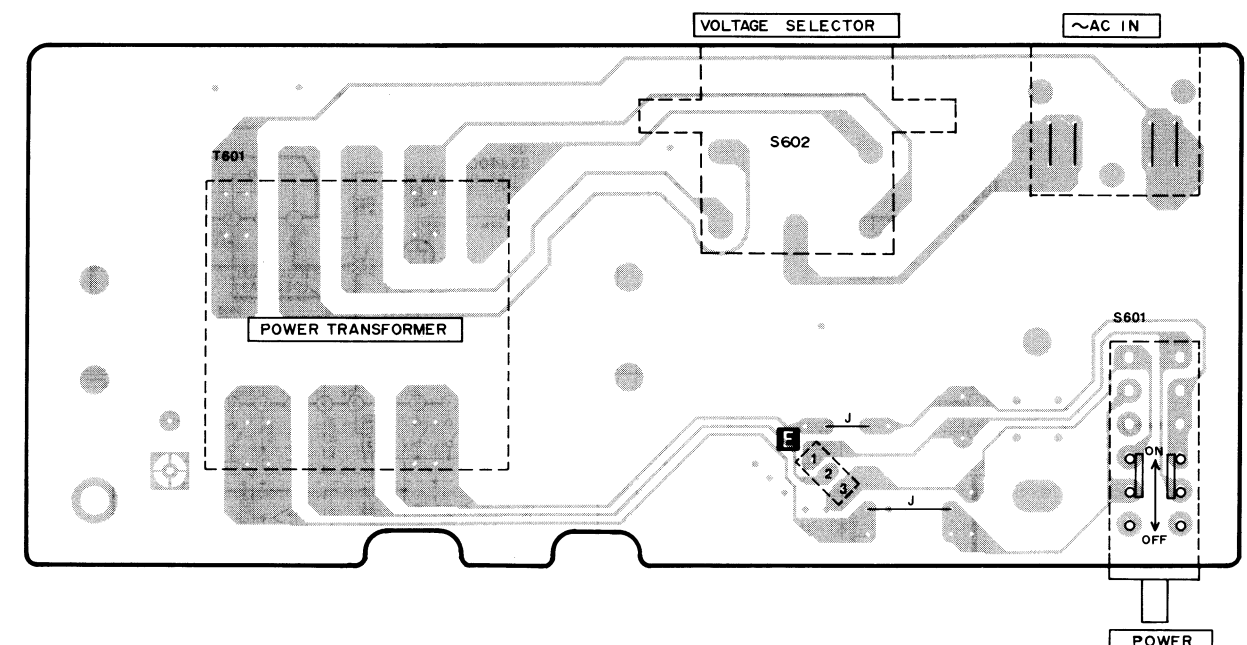
### VI LED P.C.B.



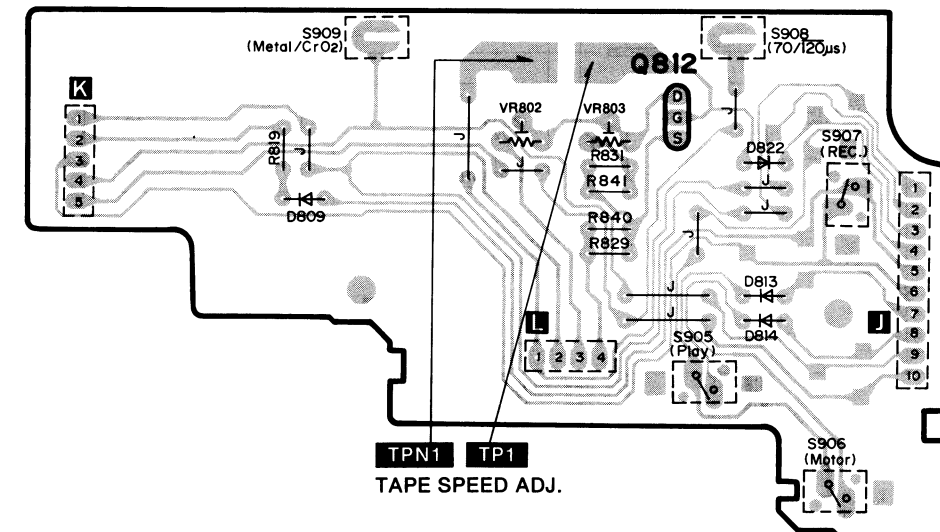
### IV VR/SW P.C.B.



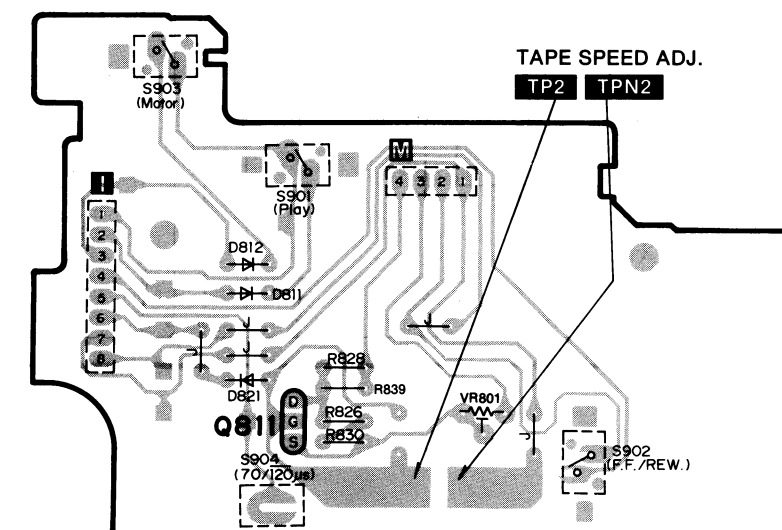
### III POWER SUPPLY P.C.B. (XA)



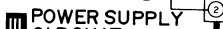
### VII MECHANISM P.C.B. (DECK A)



### VIII MECHANISM P.C.B. (DECK B)









# RESISTORS & CAPACITORS

Notes : \* Important safety notice :

Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

## Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1K $\Omega$ )
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470 $\Omega$ )

## Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001 $\mu$ F)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Peculiarity	Value (33 $\mu$ F)	

● Capacity are in microfarads ( $\mu$ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F).

● Resistance are in ohms ( $\Omega$ ), unless specified otherwise, 1K=1,000 $\Omega$ , 1M=1,000k $\Omega$

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W 12 : 1/2W	J : $\pm 5\%$
ERG : Metal Oxide	14 : 1/4W 25 : 1/4W	F : $\pm 1\%$
ERQ : Fuse Type Metal	1A : 1W 18 : 1/8W	G : $\pm 2\%$
ERX : Metal Film	S2 : 1/4W S1 : 1/2W	J : $\pm 5\%$
ERD L : Carbon (chip)	2F : 1/4W 50 : 1/2W	K : $\pm 10\%$
ERO K : Metal Film (chip)	2A : 2W 3A : 3W	M : $\pm 20\%$
ERC : Solid	6G : 1/10W 8G : 1/8W	
ERF : Incombustible Box-Shaped		
ERM : Wire-Wound		
RRJ : Chip Resistor		
ERJ : Chip Resistor		

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V 1A : 10V	K : $\pm 10\%$
ECCD : Ceramic	1C : 16V 1E : 25V	M : $\pm 20\%$
ECKD : Ceramic Capacitor	1H : 50V 1V : 35V	Z : +80 %
ECQM : Polyester	50 : 50V 05 : 50V	-20
ECQP : Polypropylene	2H : 500V 2A : 100V	J : $\pm 5\%$
ECG : Ceramic	1 : 100V 1J : 63V	G : $\pm 2\%$
ECEA N : Non Polar Electrolytic	KC : 400V AC	F : $\pm 1\%$
QCU : Ceramic (Chip Type)	KC : 125V AC	C : $\pm 0.25$ pF
ECUX : Ceramic (Chip Type)	(UL)	D : $\pm 0.5$ pF
ECF : Semiconductor		
EECW : Liquid electrolyte double layer capacitor		

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
RESISTORS(VALUE, WATTAGE)								
R1	ERDS2TJ101	100 1/4	R45	ERDS2TJ101	100 1/4	R406	ERDS2TJ473	47K 1/4
R2	ERDS2TJ101	100 1/4	R45 (E, EG, EH, XA)	ERDS2TJ101	100 1/4	R407	ERDS2TJ432	4.3K 1/4
R3	ERDS2TJ101	100 1/4	R45 (EK, XL)	ERDS2TJ101	100 1/4	R408	ERDS2TJ432	4.3K 1/4
R4	ERDS2TJ101	100 1/4	R46	ERDS2TJ101	100 1/4	R409	ERDS2TJ332	3.3K 1/4
R7	ERDS2TJ225	2.2M 1/4	R46 (E, EG, EH, XA)	ERDS2TJ101	100 1/4	R410	ERDS2TJ332	3.3K 1/4
R8	ERDS2TJ225	2.2M 1/4	R46 (EK, XL)	ERDS2TJ101	100 1/4	R411	ERDS2TJ102	1K 1/4
R9	ERDS2TJ101	100 1/4	R47	ERDS2TJ274	270K 1/4	R412	ERDS2TJ102	1K 1/4
R10	ERDS2TJ101	100 1/4	R48	ERDS2TJ274	270K 1/4	R413	ERDS2TJ274	270K 1/4
R11	ERDS2TJ392	3.9K 1/4	R49	ERDS2TJ154	150K 1/4	R414	ERDS2TJ274	270K 1/4
R12	ERDS2TJ392	3.9K 1/4	R50	ERDS2TJ154	150K 1/4	R415	ERDS2TJ184	180K 1/4
R13	ERDS2TJ272	2.7K 1/4	R51	ERDS2TJ363	36K 1/4	R416	ERDS2TJ184	180K 1/4
R14	ERDS2TJ272	2.7K 1/4	R52	ERDS2TJ363	36K 1/4	R417	ERDS2TJ470	47 1/4
R15	ERDS2TJ122	1.2K 1/4	R53	ERDS2TJ103	10K 1/4	R418	ERDS2TJ470	47 1/4
R16	ERDS2TJ122	1.2K 1/4	R54	ERDS2TJ103	10K 1/4	R419	ERDS2TJ222	2.2K 1/4
R17	ERDS2TJ332	3.3K 1/4	R61	ERDS2TJ154	150K 1/4	R420	ERDS2TJ103	10K 1/4
R18	ERDS2TJ332	3.3K 1/4	R62	ERDS2TJ154	150K 1/4	R423	ERDS2TJ102	1K 1/4
R19	ERDS2TJ154	150K 1/4	R63	ERDS2TJ225	2.2M 1/4	R424	ERDS2TJ473	47K 1/4
R20	ERDS2TJ154	150K 1/4	R64	ERDS2TJ225	2.2M 1/4	R601	ERDS2TJ271	270 1/4
R21	ERDS2TJ273	27K 1/4	R301	ERDS2TJ1R0	1 1/4	(EK, XL)	ERDS2TJ470	47 1/4
R22	ERDS2TJ273	27K 1/4	R302	ERDS2TJ563	56K 1/4	(E, EG, EH, XA)	ERDS2TJ271	270 1/4
R23	ERDS2TJ472	4.7K 1/4	R303	ERDS2TJ563	56K 1/4	(EK, XL)	ERDS2TJ470	47 1/4
R24	ERDS2TJ472	4.7K 1/4	R304	ERDS1FJ100	10 1/2	(E, EG, EH, XA)	ERDS2TJ101	100 1/4
R25	ERDS2TJ102	1K 1/4	(EK, XL)	ERDS2TJ100	10 1/4	R603	ERDS2TJ101	100 1/4
R26	ERDS2TJ102	1K 1/4	(E, EG, EH, XA)	ERDS1FJ100	10 1/2	R604	ERDS2TJ102	1K 1/4
R27	ERDS2TJ330	33 1/4	(EK, XL)	ERDS2TJ100	10 1/4	R605	ERDS1FJ100	10 1/2
R28	ERDS2TJ330	33 1/4	R305	ERDS2TJ100	10 1/4	(E, EG, EH, XA)	ERDS2TJ101	100 1/4
R29	ERDS2TJ472	4.7K 1/4	(E, EG, EH, XA)	ERDS2TJ100	10 1/4	(EK, XL)	ERDS2TJ101	100 1/4
R30	ERDS2TJ472	4.7K 1/4	R308	ERDS2TJ561	560 1/4	R606	ERDS2TJ101	100 1/4
R31	ERDS2TJ182	1.8K 1/4	R309	ERDS1FJ220	22 1/2	(E, EG, EH, XA)	ERDS1FJ220	22 1/2
R32	ERDS2TJ182	1.8K 1/4	(EK, XL)	ERDS2TJ220	22 1/4	(EK, XL)	ERDS2TJ220	22 1/4
R33	ERDS2TJ182	1.8K 1/4	(E, EG, EH, XA)	ERDS2TJ220	22 1/4	R607	ERDS2TJ102	1K 1/4
R34	ERDS2TJ182	1.8K 1/4	R310	ERDS2TJ331	330 1/4	R608	ERDS2TJ102	1K 1/4
R37	ERDS2TJ272	2.7K 1/4	R401	ERDS2TJ242	2.4K 1/4	R613	ERDS2TJ563	56K 1/4
R38	ERDS2TJ272	2.7K 1/4	R402	ERDS2TJ242	2.4K 1/4	R621	ERQ14LKR22E	0.22 1/4
R39	ERDS2TJ183	18K 1/4	R403	ERDS2TJ471	470 1/4	(EK, XL)		
R40	ERDS2TJ183	18K 1/4	R404	ERDS2TJ471	470 1/4	R622	ERQ14LKR22E	0.22 1/4
R41	ERDS2TJ152	1.5K 1/4	R405	ERDS2TJ473	47K 1/4	(EK, XL)		
R42	ERDS2TJ152	1.5K 1/4						
R43	ERDS2TJ182	1.8K 1/4						
R44	ERDS2TJ182	1.8K 1/4						

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
R623	ERG1ANJ560S	56 1	R836	ERDS2TJ154	150K 1/4	C47	ECKD1H223PF	0.022 50
(EK, XL)			R837	ERDS2TJ563	56K 1/4	C51	ECKD1H152KB	1500P 50
R624	ERG1ANJ560S	56 1	R839	ERDS2TJ473	47K 1/4	C52	ECKD1H152KB	1500P 50
(EK, XL)			R840	ERDS2TJ473	47K 1/4	C301	ECKD1H392KB	0.0039 50
R625	ERG1ANJ120S	12 1	R841	ERDS2TJ473	47K 1/4	C302	ECFR1E682KAY	6800P 25
(EK, XL)			CAPACITORS(VALUE, VOLTAGE)			C303	ECFR1E222KAY	2200P 25
R626	ERD2FCJ6R8	6.8 1/4	C3	RCBC1H471KBY	470P 50	C304	ECFR1E222KAY	2200P 25
(EK, XL)			C4	RCBC1H471KBY	470P 50	C305	ECKD1H223PF	0.022 50
R627	ERX1ANJ8R2S	8.2 1	C5	ECQB1H123JZ	0.012 50	C306	ECFD1V473KD	0.047 35
(EK, XL)			C6	ECQB1H123JZ	0.012 50	C307	ECQP1183JZ	0.018 100
R628	ERX1ANJ8R2S	8.2 1	C7	ECEA0JU101	100 6.3	C308	ECEA1CKS100	10 16
(EK, XL)			C8	ECEA0JU101	100 6.3	(E, EG, EH, XA)		
R701	ERDS2TJ363	36K 1/4	C9	ECEA1EK4R7	4.7 25	C308	ECEA1CU220	22 16
R702	ERDS2TJ363	36K 1/4	C10	ECEA1EK4R7	4.7 25	(EK, XL)		
R703	ERDS2TJ472	4.7K 1/4	C11	ECBA1H681KB5	680P 50	C309	RCBS1H271KBY	270P 50
R704	ERDS2TJ472	4.7K 1/4	C12	ECBA1H681KB5	680P 50	C310	RCBS1H271KBY	270P 50
R705	ERDS2TJ154	150K 1/4	C15	ECKD1H122KB	1200P 50	C311	ECEA1CKS100	10 16
R706	ERDS2TJ154	150K 1/4	C16	ECKD1H122KB	1200P 50	C321	ECEA1CU220	22 16
R707	ERDS2TJ562	5.6K 1/4	C17	ECCD1H181K	180P 50	(EK, XL)		
R708	ERDS2TJ221	220 1/4	C18	ECCD1H181K	180P 50	C403	ECQB1H472JZ	4700P 50
R709	ERDS2TJ221	220 1/4	C19	ECEA1HCR33	0.33 50	C404	ECQB1H472JZ	4700P 50
R710	ERDS2TJ330	33 1/4	(E, EK, EG, EH)			C405	ECQM1H333JZ	0.033 50
R711	ERDS2TJ330	33 1/4	C19	ECEA1HCR47	0.47 50	C406	ECQM1H333JZ	0.033 50
R802	ERDS2TJ102	1K 1/4	(XA, XL)			C407	ECQM1H473JZ	0.047 50
R803	ERDS2TJ103	10K 1/4	C20	ECEA1HCR33	0.33 50	C408	ECQM1H473JZ	0.047 50
R805	ERDS2TJ272	2.7K 1/4	(E, EK, EG, EH)			C409	ECQV1H334JZ	0.33 50
R806	ERDS2TJ332	3.3K 1/4	C20	ECEA1HCR47	0.47 50	C410	ECQV1H334JZ	0.33 50
R807	ERDS2TJ103	10K 1/4	(XA, XL)			C411	ECQV1H104JZ	0.1 50
R808	ERDS2TJ103	10K 1/4	C21	ECEA1HK010	1 50	C412	ECQV1H104JZ	0.1 50
R809	ERDS2TJ103	10K 1/4	C22	ECEA1HK010	1 50	C413	ECKD1H122KB	1200P 50
R810	ERDS2TJ563	56K 1/4	C23	ECKD2H101KB	100P 500	C414	ECKD1H122KB	1200P 50
R811	ERDS2TJ332	3.3K 1/4	C24	ECKD2H101KB	100P 500	C415	ECKD1H152KB	1500P 50
R812	ERDS2TJ392	3.9K 1/4	C25	ECKD1H561KB	560P 50	C416	ECKD1H152KB	1500P 50
R813	ERDS2TJ272	2.7K 1/4	C26	ECKD1H561KB	560P 50	C601	ECEA0JS102	1000 6.3
R814	ERDS2TJ103	10K 1/4	C27	ECQB1H332JZ3	3300P 50	C602	ECEA0JS102	1000 6.3
R815	ERDS2TJ563	56K 1/4	C28	ECQB1H332JZ3	3300P 50	C603	ECEA0JU222B	2200 6.3
R817	ERDS2TJ271	270 1/4	C29	ECQB1H223JZ	0.022 50	C604	ECKD1H223PF	0.022 50
R818	ERDS2TJ391	390 1/4	C30	ECQB1H223JZ	0.022 50	C605	ECKD1H223PF	0.022 50
R819	ERDS2TJ391	390 1/4	C31	ECQB1H123JZ	0.012 50	C606	ECKD1H223PF	0.022 50
R820	ERDS2TJ103	10K 1/4	C32	ECQB1H123JZ	0.012 50	C607	ECEA1AU221	220 10
R821	ERDS2TJ273	27K 1/4	C33	ECQB1H223JZ	0.022 50	C608	ECEA1AU221	220 10
R822	ERDS2TJ273	27K 1/4	C34	ECQB1H223JZ	0.022 50	C609	$\Delta$ ECEA1CU471B	470 16
R823	ERDS2TJ152	1.5K 1/4	C35	ECFR1E153KAY	0.015 25	C610	$\Delta$ ECEA1CU471B	470 16
R824	ERDS2TJ273	27K 1/4	C36	ECFR1E153KAY	0.015 25	C611	ECEA1CU102B	1000 16
R825	ERDS2TJ152	1.5K 1/4	C37	ECKD1H223PF	0.022 50	C612	ECKD2H682PE	6800P 500
R826	ERDS2TJ392	3.9K 1/4	C38	ECKD1H223PF	0.022 50	C701	ECEA1HK2R2	2.2 50
R827	ERDS2TJ101	100 1/4	C39	ECEA1HK010	1 50	C702	ECEA1HK2R2	2.2 50
(EK, XL)			C40	ECEA1HK010	1 50	C703	ECKD1H223PF	0.022 50
R828	ERDS2TJ223	22K 1/4	C41	ECEA1HK2R2	2.2 50	C802	ECEA1HCR47	0.47 50
R829	ERDS2TJ223	22K 1/4	C42	ECEA1HK2R2	2.2 50	C803	ECCD1H101K	100P 50
R830	ERDS2TJ123	12K 1/4	C43	ECEA1EK4R7	4.7 25	C804	ECKD1H223PF	0.022 50
R831	ERDS2TJ183	18K 1/4	C44	ECEA1EK4R7	4.7 25	C806	ECEA1EK4R7	4.7 25
R834	ERDS2TJ103	10K 1/4	C45	ECEA1EK4R7	4.7 25	C807	ECEA1AU221	220 10
R835	ERDS2TJ123	12K 1/4	C46	ECEA1EK4R7	4.7 25	C808	ECFR1E682KAY	6800P 25
						C809	ECFR1E682KAY	6800P 25
						C810	ECQV1H224JZ	0.22 50



## REPLACEMENT PARTS LIST

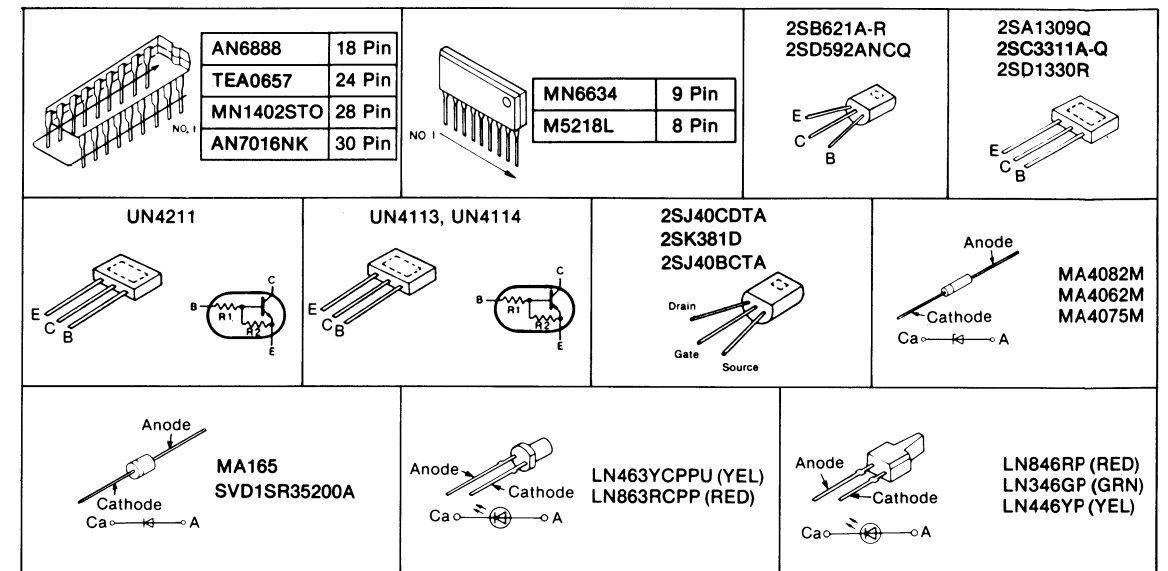
Notes : \* Important safety notice :

Components identified by  $\triangle$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)  
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>INTEGRATED CIRCUITS</b>					
IC1	AN7016NK	I.C. PLAY/REC AMP	D704K	LN863RCPP	L.E.D
IC2	MN6634	I.C. DECK A/B SELECTOR	D704L	LN863RCPP	L.E.D
IC3	M5218L	I.C. HEADPHONES AMP	D803	MA165	DIODE
IC401	TEA0657	I.C. DOLBY NR	D804	MA165	DIODE
IC701	AN6888	I.C. LED METER DRIVE	D805	MA165	DIODE
IC801	MN1402STO	I.C. MICRO COMPUTER	D806	MA165	DIODE
<b>TRANSISTORS</b>					
Q3	2SJ40BCTA	TRANSISTOR	D807	MA165	DIODE
Q4	2SJ40BCTA	TRANSISTOR	D808	MA165	DIODE
Q5	2SJ40CDTA	TRANSISTOR	D809	MA165	DIODE
Q6	2SJ40CDTA	TRANSISTOR	D810	MA165	DIODE
Q7	2SC3311A-Q	TRANSISTOR	D811	MA165	DIODE
Q8	2SC3311A-Q	TRANSISTOR	D812	MA165	DIODE
Q9	2SA1309Q	TRANSISTOR	D813	MA165	DIODE
Q10	2SA1309Q	TRANSISTOR	D814	MA165	DIODE
Q11	2SA1309Q	TRANSISTOR	D815	MA165	DIODE
Q12	2SA1309Q	TRANSISTOR	D816	LN846RP	L.E.D
Q13	2SC3311A-Q	TRANSISTOR	D817	LN346GP	L.E.D
Q14	2SC3311A-Q	TRANSISTOR	D818	LN446YP	L.E.D
Q15	2SC3311A-Q	TRANSISTOR	D819	LN846RP	L.E.D
Q16	2SC3311A-Q	TRANSISTOR	D820	MA165	DIODE
Q301	2SC3311A-Q	TRANSISTOR	D821	MA165	DIODE
Q302	2SC3311A-Q	TRANSISTOR	D822	MA165	DIODE
Q303	2SD592ANCQ	TRANSISTOR	D823	MA165	DIODE
Q304	UN4211	TRANSISTOR	<b>VARIABLE RESISTORS</b>		
Q401	2SC3311A-Q	TRANSISTOR	VR1	EVND4AA00B24	V.R. PB GAIN (DECK B)
Q402	2SC3311A-Q	TRANSISTOR	VR2	EVND4AA00B24	V.R. PB GAIN (DECK B)
Q403	2SC3311A-Q	TRANSISTOR	VR3	EVND4AA00B24	V.R. PB GAIN (DECK A)
Q404	2SC3311A-Q	TRANSISTOR	VR4	EVND4AA00B24	V.R. PB GAIN (DECK A)
Q405	2SA1309Q	TRANSISTOR	VR5	EVND4AA00B14	V.R. OVERALL (DECK A)
Q601	2SD592ANCQ	TRANSISTOR	VR6	EVND4AA00B14	V.R. OVERALL (DECK A)
Q602	2SD592ANCQ	TRANSISTOR	VR7	EWAPB1X05A54	V.R. INPUT LEVEL CONTROL
Q603	2SB621A-R	TRANSISTOR	VR8	EWAPB1X05A54	V.R. INPUT LEVEL CONTROL
Q801	UN4113	TRANSISTOR	VR301	EVND4AA00B15	V.R. BIAS CURRENT (A)
Q802	UN4113	TRANSISTOR	VR302	EVND4AA00B15	V.R. BIAS CURRENT (A)
Q803	UN4113	TRANSISTOR	VR801	EVN49C00YB53	V.R. TAPE SPEED (DECK B)
Q804	UN4113	TRANSISTOR	VR802	EVN49C00YB53	V.R. TAPE SPEED (DECK A)
Q806	2SA1309Q	TRANSISTOR	VR803	EVN49C00YB14	V.R. TAPE SPEED (DECK A)
Q807	2SD592ANCQ	TRANSISTOR	<b>COILS AND TRANSFORMERS</b>		
Q808	2SD592ANCQ	TRANSISTOR	L1	SLQX303-1KT	CHOKE COIL
Q809	UN4114	TRANSISTOR	L2	SLQX303-1KT	CHOKE COIL
Q810	UN4114	TRANSISTOR	L3	SLQX272-1YT	CHOKE COIL
Q811	2SK381	TRANSISTOR	L4	SLQX272-1YT	CHOKE COIL
Q812	2SK381	TRANSISTOR	L5	ELEPK271KA	COIL FILTER
<b>DIODES</b>					
D1	MA165	DIODE	L401	QLB40048	M.P.X. COIL
D2	MA165	DIODE	L402	QLB40048	M.P.X. COIL
D301	MA165	DIODE	T301	SL09C19-K	OSCILLATOR COIL
D302	MA165	DIODE	T601 $\triangle$	SLT5K232SA	POWER TRANSFORMER
D601	MA4062M	DIODE	(E, EG, EH)		
D602	MA4062M	DIODE	T601 $\triangle$	SLT5K233SA	POWER TRANSFORMER
D603 $\triangle$	SVD1SR35200A	RECTIFIER	(XA)		
D604 $\triangle$	SVD1SR35200A	RECTIFIER	T601 $\triangle$	SLT5K234SA	POWER TRANSFORMER
D605 $\triangle$	SVD1SR35200A	RECTIFIER	(EK, XL)		
D606 $\triangle$	SVD1SR35200A	RECTIFIER	<b>COMPONENT COMBINATIONS</b>		
D607 $\triangle$	SVD1SR35200A	RECTIFIER	Z801	EXBF7E562J	COMPONENT COMBINATION
D608 $\triangle$	SVD1SR35200A	RECTIFIER	<b>SWITCHES</b>		
D610	MA4075M	DIODE	S1	SSH3712	PUSH SWITCH, EDITING/AUTO SPACE
D704A	LN463YCPPU	L.E.D	S2	SSH3712	PUSH SWITCH, EDITING SPEED
D704B	LN463YCPPU	L.E.D	S3	SSH3712	PUSH SWITCH, DOLBY NR
D704C	LN463YCPPU	L.E.D	S601 $\triangle$	SSH1226	SW, POWER
D704D	LN463YCPPU	L.E.D	S602 $\triangle$	SSR187-1	SW, VOLTAGE SELECTOR
D704E	LN463YCPPU	L.E.D	(XA)		
D704F	LN463YCPPU	L.E.D	S901	SSP83	SW, PLAY (DECK B)
D704G	LN863RCPP	L.E.D	S902	SSP83	SW, FF/REW (DECK B)
D704H	LN863RCPP	L.E.D	S903	SSP83	SW, MOTOR (DECK B)
D704I	LN863RCPP	L.E.D	S904	LSA-1150AU	LEAF SWITCH, 70/120 (DECK B)
D704J	LN863RCPP	L.E.D	S905	SSP83	SW, PLAY (DECK A)
			S906	SSP83	SW, MOTOR (DECK A)
			S907	SSP83	SW, REC (DECK A)
			S908	LSA-1150AU	LEAF SWITCH, 70/120 (DECK A)
			S909	LSA-1150AU	LEAF SWITCH, METAL/ (DECK A)

## TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



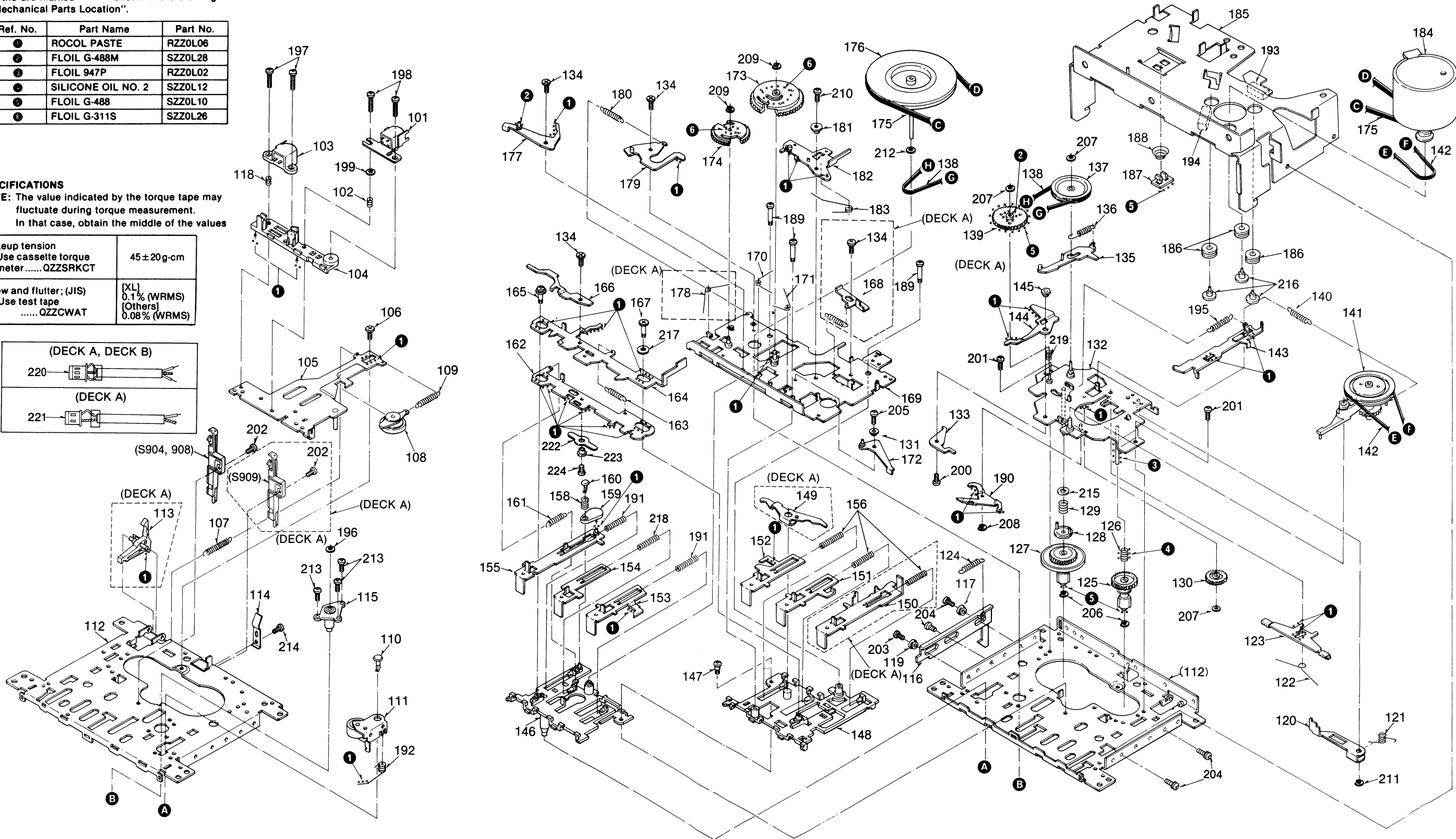
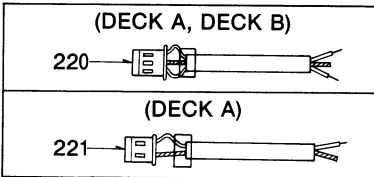
MECHANICAL PARTS LOCATION

NOTES:  
• When changing mechanism parts, apply the specified grease to the are marked "x x" shown in the drawing "Mechanical Parts Location".

Ref. No.	Part Name	Part No.
1	ROCOL PASTE	RZZ0L06
2	FLOIL G-488M	SZZ0L28
3	FLOIL 947P	RZZ0L02
4	SILICONE OIL NO. 2	SZZ0L12
5	FLOIL G-488	SZZ0L10
6	FLOIL G-311S	SZZ0L26

SPECIFICATIONS  
NOTE: The value indicated by the torque tape may fluctuate during torque measurement.  
In that case, obtain the middle of the values

Takeup tension * Use cassette torque meter ..... QZZSRKCT	45±20g-cm
Wow and flutter; (JIS) * Use test tape ..... QZZCWAT	[XL] 0.1% (WRMS) [Others] 0.08% (WRMS)



220											202	197	202	196	199	198											222	224	191	217			209	209	210	182			205	212	200	190	207			207											194	187	188	185	186	186	193			211	184																			
221											214	213	213	192											223	224	218	191			178	174	170	173	171	171	168	172	176	169	131	203	189	204	204	208	201	219	215			206											204	207	201	195	216			211	184															
										102	103	104											102	110	101	109											165	166	146	154	158	159	153	167	164	178	174	170	173	171	171	168	172	176	169	131	203	189	204	204	208	201	219	215			206											204	207	201	195	216			211	184
										113	112	107											114	105	104	115	106	111	108											134	134											134	138	133	117	139	138	137	135	136	127	128	129	132	126	125	112			130	123	122	120	121			211	184								

## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CASSETTE DECK			164	SMQT1589	LEVER
101	SJH103-1	PLAY HEAD (DECK B)	166	SMQ4872	EJECT KICK LEVER
101	SJH108	REC/PLAY HEAD (DECK A)	168	SMQ4880	FUNCTION LEVER ANGLE (DECK A)
101	SJH109	PLAY HEAD (DECK B)	169	SMQT1590	SUB CHASSIS ASS'Y
101	RJH4C35GZAM	REC/PLAY HEAD (DECK A)	170	SMQ4888	M GEAR SPRING
102	SMQ4596	SPRING	171	SMQ4890	TRIGGER ARM SPRING
103	RJH7E5YAM	ERASE HEAD (DECK A)	172	SMQ4892	TRIGGER ARM ASS'Y
103	SMQT1767	DAMPE HEAD (DECK B)	173	SMQ4894	MAIN GEAR
104	SMQ4768	HEAD BASE	174	SMQ4896	PAUSE GEAR
105	RFD135ZA	PANEL	175	SMQT1591	MAIN BELT
107	SMQ4770	HEAD PANEL SPRING	175	SMQT1765	MAIN BELT (E, EK, EG, EH)
108	SMQ4772	TAKE UP ROLLER ASS'Y	176	SMQT1592	FLYWHEEL ASS'Y (E, EK, EG, EH)
109	RFS249ZA	SPRING	176	SMQ4900	FLYWHEEL ASS'Y (XA, XL)
110	SMQ4774	FUNCTION LEVER STOPPER	177	SMQ4902	TRIGGER ARM ASS'Y
111	SMQ4776	PINCH ROLLER ASS'Y	178	SMQ4904	TRIGGER ARM SPRING
112	SMQT1458	CHASSIS	179	SMQ4906	PAUSE ARM ASS'Y
113	SMQ4778	REC SAFETY LEVER (DECK A)	180	SMQ4909	PAUSE ARM SPRING
114	SMQ4780	PACK HOLDER SPRING	181	SMQ4910	LIFT ARM COLLAR
115	SMQ4782	FLYWHEEL METAL	182	SMQT1593	LIFT ARM ASS'Y
116	RFY183ZA	LEVER	183	RFS248ZA	LIFT ARM SPRING
117	SMQ4786	COLLAR	184	MMUST130-KE	MOTOR SAA, Y
118	SMQT1629	SPRING	185	SMQT1633	FM HOLD PLATE
119	SMQ4788	COLLAR	185	SMQT1633	FM HOLD PLATE (E, EK, EG, EH)
120	SMQ4790	CONTROL LEVER	185	SMQT1717	FM HOLD PLATE (XA, XL)
121	RFS379Z	SPRING	186	SMQ4916	MOTOR RUBBER
122	SMQ4792	BRAKE SPRING	187	SMQT1595	FL PLATE
123	SMQ4794	BRAKE ARM ASS'Y	188	SMQ4922	DAMPER SPRING
124	SMQT1630	EJECT LEVER SPRING	190	SMQ4940	KICK LEVER
125	SMQ4800	SUPPLY REEL ASS'Y	191	SMQ4958	BUTTON LEVER SPRING
126	SMQT1636	SPRING	192	SMQT1453	SPRING
127	SMQT1769	TAKE UP REEL ASS'Y	193	SMQT1598	FELT
128	SMQ4806	SENSING PIECE	194	SMQT1636	SPRING
129	SMQ4808	SENSING PIECE SPRING	194	SMQT1680	FELT (E, EK, EG, EH)
130	SMQ4810	FF GEAR	194	SMQT1680	FELT (XA, XL)
131	SMQ4816	COLLAR	195	RFS372Z	RF SLIDE LEVER SPRING (DECK B)
132	RFU16ZA	REEL BASE ASS'Y	195	RFS378Z	RF SLIDE LEVER SPRING (DECK A)
133	SMQ4814	T. ROLLER KICK LEVER	195	RFS378Z	RF SLIDE LEVER SPRING (DECK B)
135	SMQ4818	SENSING LEVER	195	RFS378Z	RF SLIDE LEVER SPRING (DECK A)
136	SMQ4820	SENSING LEVER SPRING	195	RFS378Z	RF SLIDE LEVER SPRING (DECK B)
137	SMQ4822	PULLEY	195	RFS378Z	RF SLIDE LEVER SPRING (DECK A)
138	SMQ4824	FULL AUTO BELT	195	RFS378Z	RF SLIDE LEVER SPRING (DECK B)
139	SMQ4826	CAM GEAR	218	SMQT1768	BUTTON LEVER SPRING
140	SMQT1631	RF CLUTCH ARM SPRING	219	SMQT1549	SPRING
141	SMQT1583	RF CLUTCH ARM ASS'Y	220	SWKST130M1	READ WIRE ASS'Y (DECK B)
142	SMQT1584	RF BELT	220	SWKST130M2	READ WIRE ASS'Y (DECK A)
143	SMQ4832	RF SLID LEVER ASS'Y	221	SWKST130M3	READ WIRE ASS'Y (DECK A)
144	SMQ4834	AUTO LEVER	222	RFY353Z	STOPER (DECK B)
145	SMQ4938	AUTO LEVER COLLAR	222	RFY353Z	STOPER (DECK B)
146	SMQ4836	BUTTON BASE(L)	223	RFZ85Z	COLLAR (DECK B)
148	SMQ4840	BUTTON BASE(R)			
149	SMQ4842	REC STOPPER (DECK A)			
150	SMQT1586	REC BUTTON LEVER (DECK A)			
151	SMQ4846	PLAY BUTTON LEVER			
152	SMQ4848	RWD BUTTON LEVER			
153	SMQ4850	FF BUTTON LEVER			
154	SMQ4852	STOP BUTTON LEVER			
155	SMQ4854	PAUSE BUTTON LEVER			
156	SMQ4856	BUTTON LEVER SPRING			
158	SMQ4860	PAUSE LEVER SPRING			
159	SMQ2444	PAUSE LEVER			
160	SMQ4862	P STOPPER			
161	SMQT1588	SPRING			
162	SMQT1597	LEVER (DECK B)			
162	SMQT1764	LEVER (DECK A)			
163	RFS253ZA	SPRING			

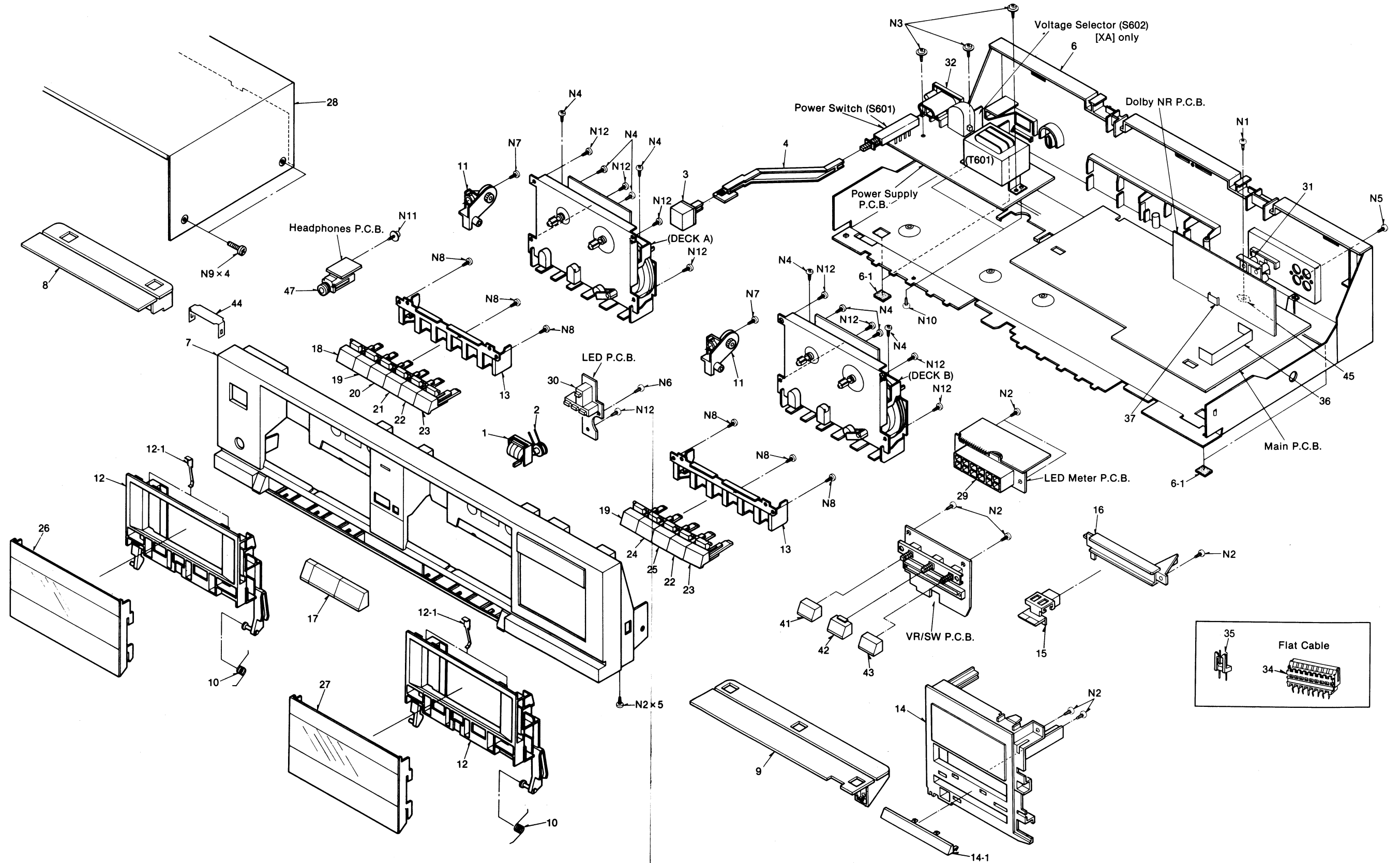
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
206	RFE133Z	RETAINING RING	213	SMQ4934	SCREW
207	SMQ4930	POLYSLIDE WASHER	214	XTN26+3	SCREW
208	XUC12FT	E-RING	215	SMQT1454	WASHER
209	XUC2FT	E-RING	216	SMQ4918	COLLAR SCREW
210	XYN26+C6	SCREW	217	RFN73Z	SPACER
211	XUC15FT	E-RING	224	XSS2+25	SCREW (DECK B)
212	SMQ4932	POLYSLIDER WASHER			

Notes : \* Important safety notice :  
Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.  
\* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)  
Parts without these indications can be used for all areas.  
\*  $\otimes$  mark parts are used for black type only.  
\*  $\odot$  mark parts are used for silver type only.  
Parts other than  $\otimes$  and  $\odot$  marked are used for all color types.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CABINET AND CHASSIS			23	$\otimes$ SBC871A	BUTTON, PAUSE
1	SJN20	TAPE COUNTER	23	$\odot$ SBC806A-1	BUTTON, PAUSE
2	SMQ20018	COUNTER BELT	24	$\otimes$ SBC868B	BUTTON, REW/REV
3	$\otimes$ SBC666-5	BUTTON, POWER	24	$\odot$ SBC803B-1	BUTTON, REW/REV
3	$\odot$ SBC666	BUTTON, POWER	25	$\otimes$ SBC869B	BUTTON, FF/CUE
4	SUB255	ROD	25	$\odot$ SBC804B-1	BUTTON, FF/CUE
6	SKMST130-KE	REAR PANEL ASS'Y	26	$\otimes$ SGE1919	CASSETTE LID(DECK A)
(E)			26	$\odot$ SGE1919-2	CASSETTE LID(DECK A)
6	SKMST130-KEG	REAR PANEL ASS'Y	27	$\otimes$ SGE1919-1	CASSETTE LID(DECK B)
(EG, EH)			27	$\odot$ SGE1919-3	CASSETTE LID(DECK B)
6	SKMST130-KEK	REAR PANEL ASS'Y	28	$\otimes$ SKC2090K99	CABINET BODY
(EK)			28	$\odot$ SKC2090S98	CABINET BODY
6	SKMST130-KXA	REAR PANEL ASS'Y	29	LN121307P	LED BLOCK ASS'Y (D704A--D704L)
(XA)			30	LN041395P	LED BLOCK ASS'Y (D816--D818)
6	SKMST130-KXL	REAR PANEL ASS'Y	31	SJF3057N	TERMINAL BOARD
(XL)			32	$\Delta$ SJS9236	AC INLET
6-1	SKL293	FOOT	34	SJT30543-V	CONNECTOR(5P)
7	$\otimes$ SGYST130-KE	FRONT PANEL ASS'Y	34	SJT30843-V	CONNECTOR(8P)
7	$\odot$ SGTST130-SE	FRONT PANEL ASS'Y	34	SJT31043-V	CONNECTOR(10P)
8	SGX7894-1	SPACER	35	QJP1920TN-1	CONNECTOR(2P)
9	SGX7895-1	SPACER	35	QJP1921TN-1	CONNECTOR(3P)
10	SUS797	SPRING (CASSETTE HOLDER)	36	SMC1298	SHIELD PLATE
11	SGXST25-KP	DAMPER GEAR ASS'Y	37	SMN2043	ANGLE
12	SGXST17-KM	CASSETTE HOLDER ASS'Y	41	$\otimes$ SBC1014	BUTTON, EDITING/AUTO SPACE
12-1	QBP2006A	SPRING (CASSETTE HOLDER)	41	$\odot$ SBC1014-3	BUTTON, EDITING/AUTO SPACE
13	SMN2001-1	BRACKET	42	$\otimes$ SBC1014-1	BUTTON, EDITING SPEED
14	$\otimes$ SGXST18-KM	ORNAMENT ASS'Y	42	$\odot$ SBC1014-4	BUTTON, EDITING SPEED
14	$\odot$ SGXST130-SE	ORNAMENT ASS'Y	43	$\otimes$ SBC1014-2	BUTTON, DOLBY NR
14-1	$\otimes$ SGX9044	ORNAMENT	43	$\odot$ SBC1014-5	BUTTON, DOLBY NR
14-1	$\odot$ SGX9044-1	ORNAMENT	44	SWJ31014	BRACKET
15	$\otimes$ SBD149	KNOB, VOLUME	45	SNE55	BRACKET
15	$\odot$ SBD149-1	KNOB, VOLUME	47	QJA0455ZC	JACK, HEADPHONES
16	$\otimes$ SGX9047-2	SLIDE GUIDE	SCREWS, WASHERS AND NUTS		
16	$\odot$ SGX9047-3	SLIDE GUIDE	N1	XTBS3+8JFZ1	SCREW
17	$\otimes$ SGX7897	ORNAMENT	N2	XTB3+10J	SCREW
17	$\odot$ SGX7897-1	ORNAMENT	N3	XTW3+12Q	SCREW
18	$\otimes$ SBC866A	BUTTON, REC	N4	XTB3+6F	SCREW
18	$\odot$ SBC801A-1	BUTTON, REC	N5	XTB3+12JFZ	SCREW
19	$\otimes$ SBC867A	BUTTON, PLAY	N6	XTV26+6J	SCREW
19	$\odot$ SBC802A-1	BUTTON, PLAY	N7	XTB3+12J	SCREW
20	$\otimes$ SBC868A	BUTTON, REW	N8	XTB26+8J	SCREW
20	$\odot$ SBC803A-1	BUTTON, REW	N9	$\otimes$ SNE2125-1	SCREW
21	$\otimes$ SBC869A	BUTTON, FF	N9	$\odot$ SNE2125	SCREW
21	$\odot$ SBC804A-1	BUTTON, FF	N10	XTB3+8JFZ	SCREW
22	$\otimes$ SBC870A	BUTTON, STOP/EJECT	N11	XTWS3+10Q	SCREW
22	$\odot$ SBC805A-1	BUTTON, STOP/EJECT	N12	XTB3+8J	SCREW

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PACKING MATERIAL			A1	$\Delta$ SJA163	POWER CORD
P1	$\otimes$ SPG6204	PACKING CASE	(XL)		
P1	$\odot$ SPG6205	PACKING CASE	A1	$\Delta$ SJA185	POWER CORD
P2	SPS4963-1	PAD (FRONT)	(XA)		
P3	SPS4964-2	PAD (BACK)	A2	SJP2201	CORD
P4	XZB50X65B02	POLY SHEET	A3	SQF13170	INSTRUCTION MANUAL
P5	SPS4905	PAD (ACCESSORY) (ACCESSORY)	(E, EH)		
ACCESSORIES			A3	SQF13171	INSTRUCTION MANUAL
A1	$\Delta$ SFDAC05E03	POWER CORD	(EK)		
(E, EG, EH)			A3	SQF13172	INSTRUCTION MANUAL
A1	$\Delta$ SFDAC05G02	POWER CORD	(EG)		
(EK)			A3	SQF13174	INSTRUCTION MANUAL
			(XA, XL)		
			A4	$\Delta$ RJP120ZBS-H	AC PLUG ADAPTOR
			(XA)		

## ■ CABINET PARTS LOCATION



8	12	12-1	7	10	17	18	19	20	21	22	23	12-1	12	11	13	2	10	19	24	25	22	3	23	11	9	13	4	6-1	14	14-1	15	6	16	6-1											
26				44	47	27	28									30										41	42	43	32	29		37	35	31	34	36	45								
			N9									N11	N8			N8	N7		N8	N4	N12	N12	N4	N2	N6	N12	N8	N7	N8	N4	N12	N8	N12	N12	N4	N3	N12	N10	N2		N2		N2	N1	N5

Cassette Deck

RS-T130

## DEUTSCH

## MESSUNGEN UND EINSTELL METHODEN

**Meßinstrumente**

- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

**Tonkopf-Azimuteinstellung**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8kHz, -20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajoscghe wellenfigur sich, wie abgebildet, 0 Grad nähert.

**Anmerkung:**

When L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2. Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.

**Bandgeschwindigkeits-einstellung****Normale Geschwindigkeit**

1. Den Wahlschalter für Editier-Bandgeschwindigkeit auf "x1" stellen.
2. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
3. Deck A = VR802 und Deck B = VR801 so einstellen, daß der Ausgang dem Sollwert entspricht.

**Hohe Geschwindigkeit**

4. Den Editier-Bandgeschwindigkeits-Wahlschalter auf "x2" stellen und das Deck A = TP1 und TPN1, Deck B = TP2 und TPN2 anschließen.
5. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
6. Deck A = VR803 so einstellen, daß der Ausgang dem Sollwert entspricht.
7. Das Deck A = TP1 und TPN1, Deck B = TP2 und TPN2 öffnen.

**Wiedergabefrequenzaang**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12.5kHz~63Hz, -20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in Abb. 5 gezeigten Bereich liegt.

**Einstellung der Wiedergabeverstärkungsregelung**

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie VR1 (L-K) [[VR2 (R-K)]] für Deck B und VR3 (L-K) [[VR4 (R-K)]] für Deck A so ein, daß die Abgabe den Normwert erfüllt.

**Gesamtfrequenzgang**

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.
2. Geben Sie über einen Lautstärkereglern ein Bezugseingabesignal (1 kHz, -20 dB) ein.
3. Stellen Sie das Signal auf 20 dB und justieren die Frequenz von 50 Hz ~ 10 kHz.
4. Nehmen Sie das Wobbelsignal auf.
5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bezugsfrequenz (1 kHz) in dem in **Abb. 8** aufzeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie **VR301** (L-K) und **VR302** (R-K) so, daß der Frequenzpegel mit der Norm übereinstimmt.
7. Wiederholen Sie die Schritte 2~6 und verwenden das CrO<sub>2</sub> Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 12.5 kHz (50 Hz ~ 12.5 kHz) angehoben.
8. Achten Sie darauf, daß sich der Frequenzpegel in dem in **Abb. 9** aufgezeigten Bereich befindet.

**Einstellung der Gesamtverstärkungsregelung**

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.
2. Legen Sie ein Bezugseingabesignal (1 kHz, -20 dB) an. Stellen Sie das Ausgangssignal auf einen Pegel von 0.4 V ein.
3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.
5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie **VR5** (L-K) und **VR6** (R-K).
6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

<div><div>Appareils de mesurage</div><div><div><div>• Voltmètre électronique</div><div>• Oscilloscope</div><div>• Compteur de fréquence numérique</div><div>• Oscillateur de fréquence audio</div></div><div><div>• A.T.T. (Atténuateur)</div><div>• Voltmètre à C.C.</div><div>• Résistance (600Ω)</div></div></div></div>	
<div><div>Reglage Azimutal de la tete</div><div><div>1. Faire jouer la portion du réglage de l'azimuth (8kHz, -20dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimuthale jusqu'à ce que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.</div></div></div>	<div><div>Nota:</div><div><div>Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximisés et égaux.</div><div>2. Effectuer le même réglage sur le mode d'audition.</div></div></div>
<div><div>Réglage de la vitesse de défilement Vitesse</div><div><div>normal</div><div><div>1. Placer le sélecteur de vitesse d'édition sur la position "x 1".</div><div>2. Lire la partie centrale de la bande d'essai (QZZCWAT).</div><div>3. Régler VR802 pour la platine A et VR801 pour la platine B de manière que la sortie ait la valeur standard.</div></div></div><div><div>Grande vitesse</div><div><div>4. Placer le sélecteur de vitesse d'édition sur la position "x 2" et relier TP1 de la platine A à TPN1 et TP2 de la platine B à TPN2.</div><div>5. Lire la partie centrale de la bande d'essai (QZZCWAT).</div><div>6. Régler VR803 pour la platine A de manière que la sortie ait la valeur standard.</div><div>7. Débrancher les liaisons entre TP1 de la platine A et TPN1 et entre TP2 de la platine B et TPN2.</div></div></div></div>	
<div><div>Reponse en Frequence de la Lecture</div><div><div>1. Faire jouer la partie de la réponse en fréquence (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) de la bande d'essai (QZZCFM).</div><div>2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 5, à la fois pour le canal de gauche et le canal de droite.</div></div></div>	
<div><div>Reglage de L'amplification de Lecture</div><div><div>1. Faire jouer la partie réglée de l'amplification (315 Hz, 0 dB) de la bande d'essai (QZZCFM).</div><div>2. Régler la platine B: VR1 (canal de gauche) [VR2 (canal de droite)] et la platine A: VR3 (canal de gauche) [VR4 (canal de droite)] de telle sorte que la sortie soit en deçà de la valeur standard.</div></div></div>	

Reponse en Frequence Totale

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.

2. Appliquer un signal d'entrée de référence (1 kHz, -20 dB) par l'intermédiaire d'un atténuateur.

3. Diminuer le signal de 20 dB et régler la fréquence de 50 Hz ~ 10 kHz.

4. Enregistrer le balayage de fréquence.

5. Faire jouer le signal enregistré et s'assurer qu'il soit en deçà de la plage montrée à la Fig. 8 en comparaison à la fréquence de référence (1 kHz).
6. S'il n'est pas en deçà de la plage standard, régler VR301 (canal de gauche) et VR302 (canal de droite) de telle sorte que le niveau de fréquence soit en deçà de la plage standard.

7. Répéter les étapes 2 ~ 6 ci-dessus en utilisant la bande CrO<sub>2</sub> (QZZCRX) et la bande métallisée (QZZCRX) en augmentant la plage de fréquence à 12.5 kHz (50 Hz ~ 12.5 kHz).

8. S'assurer que le niveau soit en deçà de la plage montrée à la Fig. 9.

Reglage de L'amplification Totale

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.

2. Appliquer un signal d'entrée de référence (1 kHz, -20 dB). Diminuer la sortie de telle sorte que son niveau devienne de 0.4 V.

3. Enregistrer ce signal d'entrée.
4. Faire jouer le signal enregistré à l'étape 3 ci-dessus, et s'assurer que la sortie en deçà de la valeur standard.

5. Si elle n'est pas en deçà de la valeur standard, régler VR5 (canal de gauche) et VR6 (canal de droite).

6. Répéter les étapes 2 ~ 5 ci-dessus jusqu'à ce que la sortie soit en deçà de la valeur standard.

ESPAÑOL

METODOS DE AJUSTE Y MEDIDA

Instrumento de medición

- EVM (Voltímetro electrónico)
  - Osciloscopio
  - Frecuencímetro digital
  - Oscilador AF
- ATT (Atenuador)
  - Voltímetro CC
  - Resistor (600Ω)

Ajuste Azimutal de Cabeza

1. Reproducir la porción de ajuste azimutal (8kHz, -20dB) de la cinta de prueba (QZZCFM). Variar el tornillo de ajuste azimutal hasta que las salidas del CH-1 y CH-D se maximicen y la forma de onda de lissajous, como ilustrado, se acerque a grado 0.
- Nota:**

Si CH-1 y CH-D no son maximizados en el mismo punto, ajustar al punto donde los niveles de cada canal sean maximizados e igualados.

2. Efectuar el mismo ajuste en la modalidad de reproducción.

Ajuste de la Velocidad de la Cinta

Velocidad normal

- Lleve a "x1" el selector de la velocidad de la cinta de edición.
- Reproduzca la sección central de la cinta de prueba (QZZCWAT).
- Ajuste la platina A = VR802 y la platina B = VR801 de modo que la salida quede comprendida dentro de los valores estándares.

Alta velocidad

- Ponga el selector de la velocidad de la cinta editora en "x2" y realice la conexión siguiente: platina A = TP1 y TPN1, platina B = TP2 y TPN2.
- Reproduzca la sección central de la cinta de prueba (QZZCWAT).
- Ajuste la platina A = VR803 de modo que la salida quede comprendida dentro de los valores estándares.
- Desconecte la platina A = TP1 y TPN1 y la platina B = TP2 y TPN2.

Respuesta de Frecuencia de Reproduccion

1. Reproducir la parte de respuesta de frecuencia de reproducción (315 Hz, 12.5 kHz~63 Hz, -20 dB) de la cinta de prueba (QZZCFM).
2. Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la Fig. 5 para ambos CH-I y CH-D.

Ajuste de Ganancia de Reproduccion

1. Reproducir la porción ajustada de ganancia (315 Hz, 0 dB) de la cinta de prueba (QZZCFM).
2. Ajustar la Platina B: VR1 (CH-I) [[VR2 (CH-D)]] y la Platina A: VR3 (CH-1) [[VR4 (CH-D)]] de manera que la salida esté dentro del valor estándar.

Respuesta de Frecuencia Total

- Poner una cinta virgen normal (QZZCRA) y poner la unidad en la modalidad de Pausa de Grabación.
  - Aplicar la señal de entrada de referencia (1 kHz, -20 dB) a través de un atenuador.
  - Atenuar la señal por 20 dB y ajustar la frecuencia de 50 Hz~10 kHz.
  - Grabar el barrido de frecuencia.
  - Reproducir la señal grabada y asegurarse de que esté dentro de la gama mostrada en la Fig. 8 en comparación con la frecuencia de referencia (1 kHz).
- Si no está dentro de la gama de frecuencia, ajustar VR301 (CH-I) y VR302 (CH-D) de manera que el nivel de frecuencia esté dentro de la gama estándar.
  - Repetir los pasos 2~6 de arriba utilizando la cinta CrO<sub>2</sub> (QZZCRX) y la cinta metálica (QZZCRZ) incrementando la gama de frecuencia a 12.5 kHz (50 Hz~12.5 kHz).
  - Asegurarse de que el nivel esté dentro de la gama mostrada en la Fig. 9.

Ajuste de Ganancia Total

- Insertar la cinta de prueba en blanco normal (QZZCRA) y poner la unidad en modalidad de pausa de Grabación.
  - Aplicar la señal de entrada de referencia (1 kHz, -20 dB). Atenuar la salida de manera que su nivel se haga 0.4 V.
  - Grabar la señal de entrada.
- Reproducir la señal grabada en el paso 3 de arriba y asegurarse de que la salida esté dentro del valor estándar.
  - Si no está dentro del valor estándar, ajustar VR5 (CH-I) y VR6 (CH-D).
  - Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.